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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR                                                                                    | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|---------------------------------------------------------------------------------------------------------|---------------------|------------------|
| 10/645,322      | 08/21/2003  | Eugene A. Gregerson                                                                                     | 3349.1004-001       | 7578             |
| 21005           | 7590        | 11/27/2006                                                                                              |                     | EXAMINER         |
|                 |             | HAMILTON, BROOK, SMITH & REYNOLDS, P.C.<br>530 VIRGINIA ROAD<br>P.O. BOX 9133<br>CONCORD, MA 01742-9133 |                     | SONG, HOON K     |
|                 |             |                                                                                                         | ART UNIT            | PAPER NUMBER     |
|                 |             |                                                                                                         |                     | 2882             |

DATE MAILED: 11/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

1D

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 10/645,322             | GREGERSON ET AL.    |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | Hoon Song              | 2882                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 06 September 2006.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) 20-24,27-34 and 39-47 is/are allowed.
- 6) Claim(s) 1-19,25,26 and 35-38 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 16 May 2004 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                        |                                                                   |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/15/2006</u>                                                 | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Objections***

Claim 1 is objected to because of the following informalities:

In claim 1 at line 4, "a gantry" should read --the gantry--.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Boyd et al. (US 5014293) in view of Tam (US 6130930).

Regarding claim 19, Boyd teaches an imaging apparatus comprising:

a generally O-shaped gantry (figure 12) having a radiation source (32) and a detector (33) operable to obtain images of an object positioned inside the gantry;  
a support structure (16);  
a gantry positioning apparatus (14, 13) that secures the gantry to the support structure in a cantilevered manner (figure 1), the positioning apparatus translating the gantry to multiple positions in a direction that is substantially parallel to the central axis of the gantry (figure 1); and

a processor which receives imaging data from the detector obtained at multiple gantry positions in the direction of gantry translation (CT imaging reconstruction, column 4 line 1-5).

However Boyd fails to teach a CT system combines the data to extend the field of view of the imaging system.

Tam teaches a CT system combines the data to extend the field of view of the imaging system to generate 3D CT image by scan.

It would have been obvious to one of ordinary skill in the art at the time of the invention to adapt the CT system of Boyd with the axially extended image as taught by Tam, since it would help patient diagnosis.

### ***Double Patenting***

A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

Claims 1-18, 25 and 35 are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1-18, 25 and 35 of copending Application No. 11/262299. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

Claims 26 and 36-38 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 35 of copending Application No. 11/262299. Although the conflicting claims are not identical, they are not patentably distinct from each other because the modification is within ordinary skill in the art.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

***Allowable Subject Matter***

The indicated allowability of claims 1-18, 25-26 and 35-38 is withdrawn in view of the newly discovered reference(s) to the copending Application No. 11/262299.

Rejections based on the newly cited reference(s) above.

Claims 20-24, 27-34 and 39-47 are allowed over prior art.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 20-24, the prior art fails to teach an imaging apparatus having a gantry positioning apparatus that secures a gantry to a support structure in a cantilevered manner, the positioning apparatus operable to rotate the gantry about a first axis, and translate the gantry in the directions of a second axis and a third axis, where the first, second, and third axes are mutually orthogonal and a control system that actuates the gantry positioning apparatus to rotate about the first axis and translate in the directions of the second and third axes so as to approximate a rotation of the gantry about a focal spot of the radiation source as claimed in independent claim 20.

Regarding claims 27-34, the prior art fails to teach an imaging apparatus having a gantry having an interior diameter; a gantry positioning apparatus that secures the gantry to the support structure in a cantilevered manner, the positioning apparatus operable to translate the gantry in two perpendicular directions; and a control system that actuates the gantry positioning apparatus to translate the gantry in coordination with the rotation of a source and detector, such that, for a rotational position of the source and detector, the detector is tangent to a virtual circle centered on the and containing the object being imaged, where the virtual circle has a diameter that is less than the interior diameter of the gantry as claimed in independent claim 27.

Regarding claims 39-42, the prior art fails to teach a method of obtaining a large field-of-view in an imaging system by rotating a gantry about an axis, the gantry comprising a radiation source and a detector operable to obtain image data of an object within the gantry, translating the gantry a first distance in a first direction; and translating the gantry a second distance in a second direction so as to approximate a rotation of the gantry about a focal spot of the x-ray source; obtaining image data of an object while the gantry approximates a rotation about; the focal spot of the x-ray source; and combining the image data to produce an image with a wide field-of-view as claimed in independent claim 39.

Regarding claims 43-47, the prior art fails to teach a method of increasing the field-of-view of an imaging system by rotating a radiation source and a detector in the interior of the gantry to a first rotational position, the gantry containing an object to be imaged; translating the gantry to a first translational position such that the detector is

tangent to a virtual circle centered on and containing the object to be imaged, where the virtual circle has a diameter that is less than an interior diameter of the gantry; and obtaining an image of the object as claimed in independent claim 43.

***Response to Arguments***

Applicant's arguments with respect to claims 1-19, 25-26 and 35-38 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoon Song whose telephone number is (571) 272-2494. The examiner can normally be reached on 9:30 AM - 7 PM, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Glick can be reached on (571) 272 - 2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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